LIST OF CONTENTS

NUMBER 1 JULY

Helga Tuschl **Rozika Kovac** **Hans Altmann**	1	UDS and SCE in lymphocytes of persons occupationally exposed to low levels of ionizing radiation
James J. Collins **Robert T. Lundy** **Douglas Grahn**	9	A demographic model for performing site-specific health risk projections
M. Sohrabpour **N. P. Saheli** **P. Zarsav** **D. Reza Esmaeeli**	21	Estimation of the genetically significant dose from diagnostic X-ray procedures in the Islamic Republic of Iran
O. D. Markham **T. E. Hakonson** **F. W. Whicker** **J. S. Morton**	31	Iodine-129 in mule deer thyroids in the Rocky Mountain West
J. A. Mewhinney **J. H. Diel**	39	Retention of inhaled $^{238}PuO_2$ in beagles: a mechanistic approach to description
Steven A. Book	61	Iodine-129 uptake and effects of lifetime feeding in rats
Stella M. Swanson	67	Levels of ^{226}Ra, ^{210}Pb and $^{TOTAL}U$ in fish near a Saskatchewan uranium mine and mill
W. A. Goldsmith **J. W. Poston** **P. T. Perdue** **M. O. Gibson**	81	Radon-222 and progeny measurements in "typical" East Tennessee residences
C. Richard Cothern **William L. Lappenbusch**	89	Occurrence of uranium in drinking water in the U.S.
M. A. Stuchly **M. H. Repacholi** **D. W. Lecuyer**	101	Operator exposure to radiofrequency fields near a hyperthermia device
Daniel F. Cahill	109	A suggested limit for population exposure to radiofrequency radiation
D. W. O. Rogers	127	A nearly mono-energetic 6–7 MeV photon calibration source

Notes

M. S. Baxter
S. R. Aston 139 Deep-ocean radioactive waste disposal: an evaluation of the seaweed critical pathway

Philippe Hubert 144 The low-dose controversy and radiological risk assessment

Olabode T. Ogunleye 149 Assessment of radiation dose to infants from breast milk following the administration of ^{99m}Tc pertechnetate to nursing mothers

S. K. Dua
P. Kotrappa
P. C. Gupta 152 Influence of relative humidity on the charged fraction of decay products of radon and thoron

R. W. Pollock
P. C. Philip
S. Jayaraman 157 Sterilization of TLD finger monitors

Virendra P. Gupta 158 Response of an area albedo neutron dosimeter

Masami Togo
Ikuro Anzai
Tomoko Togo 162 Cesium-137 deposition in Japanese temporary residents of England

Letters

D. Pearson 167 Whole body cesium levels in man

Victor E. Archer 169 Radon daughter risks to miners and others

Bernard L. Cohen 171 Reply to Dr. Archer

J. Czarnecki 173 An interpretation method of TLD-environmental data

J. A. Bonnell 179 Stable iodine

Geoffrey G. Eichholz 180 Trivial dose levels

D. T. Bartlett' 181 Measurement of neutron dose equivalent from thermal energies up to 10 keV

Book Reviews

John Wethington, Jr. 183 Energy Deskbook by Samuel Glasstone

Ralph H. Thomas 183 Principles of Lasers by O. Svelto

IRPA Abstracts 185 South African Association of Physicists in Medicine and Biology—Group for Health Physics: Abstracts of papers presented at the meeting at Durban, South Africa, 17–19 March 1982

HPS Abstracts 191 Abstracts for the 28th Annual Health Physics Society Meeting in Baltimore, MD, 19–23 June 1983

Erratum 259

News and Notices 261

Health Physics Society Prospectus 269

HPS Affiliate Members 271

NUMBER 2 AUGUST

SPECIAL ISSUE

INDOOR RADON

Preface 273

Indoor Concentrations, Exposures and Risks

A. V. Nero: Indoor radiation exposures from ^{222}Rn and its daughters: a view of the issue 277

Thomas F. Gesell: Background atmospheric ^{222}Rn concentrations outdoors and indoors: a review 289

A. V. Nero: Airborne radionuclides and radiation in buildings: a review 303

K. D. Cliff, A. D. Wrixon, B. M. R. Green and J. C. H. Miles: Radon daughter exposures in the U.K. 323

F. Steinhäusler, W. Hofmann, E. Pohl and J. Pohl-Rüling: Radiation exposure of the respiratory tract and associated carcinogenic risk due to inhaled radon daughters 331

C. T. Hess, C. V. Weiffenbach and S. A. Norton: Environmental radon and cancer correlations in Maine 339

Source Characterization

Bernd Kahn, Geoffrey G. Eichholz and Frank J. Clarke: Search for building materials as sources of elevated radiation dose 349

John G. Ingersoll: A survey of radionuclide contents and radon emanation rates in building materials used in the U.S. 363

Niels Jonassen: On the determination of radon exhalation rates 369

Geordie H. Zapalac: A time-dependent method for characterizing the diffusion of ^{222}Rn in concrete 377

G. Sciocchetti, G. F. Clemente, G. Ingrao and F. Scacco: Results of a survey on radioactivity of building materials in Italy 385

Surveys of Radon and Radon Daughter Concentration Indoors

C. E. Roessler, G. S. Roessler and W. E. Bolch: Indoor radon progeny exposure in the Florida phosphate mining region: a review 389

A. C. George and J. Eng: Indoor radon measurements in New Jersey, New York and Pennsylvania 397

A. V. Nero, M. L. Boegel, C. D. Hollowell, J. G. Ingersoll and W. W. Nazaroff: Radon concentrations and infiltration rates measured in conventional and energy-efficient houses 401

Robert L. Fleischer, Antonio Mogro-Campero and Larry G. Turner: Indoor radon levels in the Northeastern U.S.: effects of energy efficiency in homes 407

A. C. George, E. O. Knutson and H. Franklin: Radon and radon daughter measurements in solar buildings 413

W. Chruscielewski, T. Domanski and W. Orzechowski: Concentrations of radon and its progeny in the rooms of Polish spas 421

Notes

H. Ward Alter and Richard A. Oswald: Results of indoor radon measurements using the Track Etch® method 425

Howard M. Prichard, Thomas F. Gesell, C. Thomas Hess, Conrad Weiffenbach and Philip Nyberg: Integrated radon data from dwellings in Maine and Texas 428

W. B. Johnson and P. G. Bailey: Study of radon daughter concentrations in Polk and Hillsborough counties 432

A. G. Scott: The distribution of average radon daughter concentrations in houses estimated from single-sample surveys 435

Investigations of Radon Daughter Behavior

A. C. George, E. O. Knutson and K. W. Tu: Radon daughter plateout—I. Measurements 439

E. O. Knutson, A. C. George, J. J. Frey and B. R. Koh: Radon daughter plateout—II. Prediction model 445

Gun Astri Swedjemark: The equilibrium factor *F* 453

S. N. Rudnick, W. C. Hinds, E. F. Maher and M. W. First: Effect of plateout, air motion and dust removal on radon decay product concentration in a simulated residence 463

Ronald C. Bruno: Verifying a model of radon decay product behavior indoors 471

A. G. Scott: Radon daughter deposition velocities estimated from field measurements 481

Niels Jonassen: The effect of electric fields on ^{222}Rn daughter products in indoor air 487

Measurement Techniques

Howard M. Prichard: A solvent extraction technique for the measurement of ^{222}Rn at ambient air concentrations 493

Bernard L. Cohen and Ernest S. Cohen: Theory and practice of radon monitoring with charcoal adsorption 501

K. L. Revzan and W. W. Nazaroff: A rapid spectroscopic technique for determining the potential α-energy concentration of radon decay products 509
W. W. Nazaroff, F. J. Offermann and A. W. Robb: Automated system for measuring air-exchange rate and radon concentration in houses 525

Notes

Philip C. Nyberg and David E. Bernhardt: Measurement of time-integrated radon concentrations in residences 539
Stephen W. Skinner and Philip C. Nyberg: Method for the calculation of radon response characteristics of integrating detectors 544
J. G. Ingersoll, B. D. Stitt and G. H. Zapalac: A fast and accurate method for measuring radon exhalation rates from building materials 550
Isabel M. Fisenne, Andreas George and Mark McGahan: Radon measurement intercomparisons 553
J. P. McLaughlin and N. Jonassen: The intercalibration of a radon daughter detection system with a radon detection system 556
R. A. Washington and W. J. Courneya: The measurement of low concentrations of radon in air 559

NUMBER 3 SEPTEMBER

Jacob I. Fabrikant 575 Guest Editorial: Is nuclear energy an unacceptable hazard to health?

Jacob I. Fabrikant 579 Special Report: The effects of the accident at Three Mile Island on the mental health and behavioral responses of the general population and nuclear workers

J. F. Acquavella, G. S. Wilkinson, G. L. Tietjen, C. R. Key, J. H. Stebbings, G. L. Voelz 587 A melanoma case-control study at the Los Alamos National Laboratory

Dean W. Broga, Marcus A. Gilbert 593 A review of three incidents involving the release of ^{125}I from seeds interstitially implanted within the prostate gland

Wayne A. Wiatrowski, David T. Kopp, Don W. Jordan, Fred Barragan 599 Factors affecting radiation exposure and radiographic image contrast in urology

Bruce Thomadsen, Jan van de Geijn, Dolores Buchler, Bhudatt Paliwal 607 Fortification of existing rooms used for brachytherapy patients

Darrell R. Fisher **Peter O. Jackson** **Gwen G. Brodaczynski** **Robert I. Scherpelz**	617	Levels of ^{234}U, ^{238}U and ^{230}Th in excreta of uranium mill crushermen
T. E. Myrick **B. A. Berven** **F. F. Haywood**	631	Determination of concentrations of selected radionuclides in surface soil in the U.S.
E. M. Romney **R. G. Lindberg** **J. E. Kinnear** **R. A. Wood**	643	^{90}Sr and ^{137}Cs in soil and biota of fallout areas in Southern Nevada and Utah
J. D. Cossairt	651	Recent muon fluence measurements at Fermilab
D. T. L. Jones **W. R. McMurray**	659	The neutron sensitivity of a Geiger–Müller counter between 0.5 and 8 MeV
D. C. Kocher	665	Dose-rate conversion factors for external exposure to photons and electrons
Bernard L. Cohen	687	Discounting in assessment of future radiation effects
J. G. Szekely **K. A. Perry** **A. Petkau**	699	Simulated responses to lognormally distributed continuous low radiation doses
M. A. Stuchly **D. W. Lecuyer** **R. D. Mann**	713	Extremely low frequency electromagnetic emissions from video display terminals and other devices
Roger C. Grimson **Lisa A. Kammerman** **Joseph Soukup**	723	Statistical procedures for assignments of upper bounds for radiation doses to an unbadged individual in a group for which some individuals are badged
Charles W. Miller **F. Owen Hoffman**	731	An examination of the environmental half-time for radionuclides deposited on vegetation
Douglas K. Halford, **O. Doyle Markham** **Gary C. White**	745	Biological elimination rates of radioisotopes by mallards contaminated at a liquid radioactive waste disposal area
Philippe Couchat **Michel Puard** **Gérard Lasceve**	757	Tritiated water vapor exchange in sunflowers
Notes		
Jon A. Broadway **Ann B. Strong**	765	Radionuclides in human bone samples

David M. Taylor	768	The comparative retention of bone-seeking radionuclides in the skeleton of rats
M. A. Stuchly **M. H. Repacholi** **D. W. Lecuyer** **R. D. Mann**	772	Radiofrequency emissions from video display terminals
R. Santini **P. Deschaux**	775	Incidence of low-level microwave irradiation on intestinal myoelectrical activity in the rat
K. David Steidley	778	An ultrasonic intrusion alarm for radiation areas
John Hale **John W. Thomas**	780	Reciprocity law failure for a film-screen combination: Very long exposure times
M. Krishna Gupta	783	Exposure rate calculations for an Isomatrix X-ray therapy machine
Reto Zach **Keith R. Mayoh**	786	Caloric contents of diets for environmental assessment models: A necessary condition
Yowri Ujeno	789	Relative biological effectiveness (RBE) of tritium β rays in relation to dose rate
Donald A. Cool **H. David Maillie**	791	Dissolution of tritiated glass microballoon fragments: Implications for inhalation exposure
C. L. Sanders **J. A. Mahaffey**	794	Action of vitamin C on pulmonary carcinogenesis from inhaled $^{239}PuO_2$
P. B. Roberts	798	Heritable cancer and radiation risks
A. T. Keane **D. R. Brewster**	801	Calibration of a decay-product collection and counting apparatus for the determination of exhaled thoron
Werner Hofmann	805	Some comments on *ICRP Publication* 32
Letters to the Editors		
Carl J. Johnson	809	Epidemiologic investigation of cancer incidence in people living near nuclear installations
Nancy A. Dreyer **Naomi H. Harley**	814	Reply to Dr. Johnson
Phillip S. Rummerfield	815	More on generator linearity of diagnostic X-ray equipment
Kenneth E. Weaver	816	Still more on generator linearity of diagnostic X-ray equipment

Norman Rohrig	817	Plotting neutron fluence spectra
Bengt E. Bjarngard **Kenneth R. Kase**	818	Plural of units
T. R. Crites	819	Regarding units and regular plurals
Daniel J. Strom **James E. Watson Jr.** **Paul S. Stansbury**	820	Reply to letter by Dr. Bjarngard and Dr. Kase
Book Reviews		
Kenneth R. Kase	821	*Radiation Therapy Physics* by William R. Hendee
William R. Hendee	822	*Radiation Protection in Pediatric Radiology, NCRP Report No.* 68
Jane M. Orient	823	A critique of the statistical methodology in *Radiation and Human Health* by John W. Gofman
Ralph H. Thomas	827	*Critical Issues in Setting Radiation Dose Limits. Proceedings of the NCRP*
Ralph H. Thomas	829	*Ninth International Conference on Cyclotrons and Their Applications*, edited by G. Gendreau
Sheldon Wolff	829	*How Well Can We Assess Genetic Risk? Not Very* by James F. Crow
Steve J. St. Lorant	830	*Biomagnetism. Proceedings of the Third International Workshop on Biomagnetism*, edited by S. N. Erne, H.-D. Hahlbohm and H. Lübbig
Health Physics Society Prospectus	833	
Health Physics Society Affiliate Members	835	

NUMBER 4 OCTOBER

SPECIAL ISSUE

1976 HANFORD AMERICIUM EXPOSURE INCIDENT

Dedication to Harold R. McCluskey	v
R. C. Thompson: Overview and perspective	837
B. J. McMurray: Accident description	847

B. D. Breitenstein: Medical management and chelation therapy 855
W. R. Brown: Psychological aspects 867
J. J. Jech, J. R. Berry and B. D. Breitenstein: External decontamination procedures 873
J. R. Berry, B. J. McMurray, J. J. Jech, B. D. Breitenstein and E. J. Quigley: Decontamination and treatment facility 883
H. E. Palmer, G. A. Rieksts and E. E. Icayan: *In vivo* measurements 893
B. Robinson, K. R. Heid, T. L. Aldridge and R. D. Glenn: Organ burden and radiation dose estimates 911
H. A. Ragan, J. A. Mahaffey and B. D. Breitenstein: Hematologic effects 923
J. C. Hampton: Histologic and autoradiographic observations on skin 933
D. R. Kalkwarf, V. W. Thomas Jr., K. K. Nielson and M. L. Mauch: Urinary excretion of trace metals during DTPA treatment 937

NUMBER 5 NOVEMBER

Einar Sagstuen, Håkon Theisen, Thormod Henriksen 961 Dosimetry by ESR spectroscopy following a radiation accident

Fred G. Abrath, Julia Bello, James A. Purdy 969 Attenuation of primary and scatter radiation in concrete and steel for 18 MV X-rays from a CLINAC-20 linear accelerator

E. Lynn McGuire, Max L. Baker, James F. Vandergrift 975 Evaluation of radiation exposures to personnel in fluoroscopic X-ray facilities

George M. Kanapilly, John A. Stanley, George J. Newton, Brian A. Wong, Phillip B. DeNee 981 Characterization of an aerosol sample from the auxiliary building of the Three Mile Island reactor

Notes

Howard M. Prichard, Thomas F. Gesell 991 Radon-222 in municipal water supplies in the central United States

Charles Roux, Cecilia Horvath, Rolande Dupuis 993 Effects of pre-implantation low-dose radiation on rat embryos

C. D. Berger, B. H. Lane, T. Hamrick 999 Clearance of ^{202}Tl contaminate following intravenous injection of ^{201}Tl

R. P. Rao, D. R. Rao 1001 A new X-ray TLD phosphor

Letters
C. S. Sims
G. R. Patterson Jr. 1003 Reference dosimetry for the health physics research reactor

C. Richard Cothern
William L. Lappenbusch 1005 Comments on Note by Lal *et al.*

N. Lal
Y. P. Sharma
P. K. Sharma
I. M. Talwar
K. K. Nagpaul
S. K. Chakarvarti 1006 Reply to Cothern and Lappenbusch regarding the note 'Uranium assay in milk'

Bernard L. Cohen 1007 Health effects of cadmium wastes

Book Reviews
J. R. A. Lakey 1009 *Radiation Protection Quantities for External Exposure* by G. Burger *et al.*

Allan G. Duncan 1010 *Management of Plutonium Contaminated Waste* by J. R. Grover

News and Notices 1011

Health Physics Society Prospectus 1019

Health Physics Society Affiliate Members 1021

NUMBER 6 DECEMBER

Arthur F. Eidson
James A. Mewhinney 1023 *In vitro* dissolution of respirable aerosols of industrial uranium and plutonium mixed-oxide nuclear fuels

Bente Lauridsen
Per Hedemann Jensen 1039 Shielding factors for vehicles to γ radiation from activity deposited on structures and ground surfaces

Notes
George A. Sehmel 1047 A relationship between plutonium activity densities of airborne and surface soils

Robert C. McIlhenny
Ronald M. Knaus 1050 Establishment of a field plot to study the behavior of cesium-137 in the environment

Letters
S. R. Wagner 1053 A plea for international standardization and the international system of units

Harold Marcus 1053 A mobile radiation source—contaminated cockroaches

News and Notices 1055

Health Physics Society Prospectus 1063

Errata 1064

HPS Affiliate Members 1065

List of 1982–83 Journal Reviewers 1067

List of Contents for Vol. 45 i

Author Index for Vol. 45 xiii

Subject Index for Vol. 45 xv